four, cost-effectiveness in two, cost benefit in one, cost-utility in one and general cost in one. All studies demonstrated satisfactory economic results comparing OPAT to inpatient care however fragile methodology was observed in the majority of study. **CONCLUSIONS:** in this review OPAT was a strategy that saved resources with favorable outcome in terms of related infection and complications.

PIN41

COST ANALYSIS OF THE CHRONIC HCV-RELATED CIRRHOSIS IN BULGARIA

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OBJECTIVES: HCV infection is a leading cause of chronic liver disease with long-term complications - extensive fibrosis, cirrhosis and hepatocellular carcinoma. The objective of this study is to perform analysis of the cost of therapy of patients with chronic HCV - related cirrhosis in Bulgaria. **METHODS:** It is a combined prospective and retrospective, real life observational study of 301 patients with chronic HCV infection and cirrhosis monitored in the University Hospital "Queen Joanna-ISUL" for 3-year period (2012-2014). Data on demographic, clinical characteristics and healthcare resources utilization (hospitalizations, highly-specialized interventions, pharmacotherapy) was collected. Micro-costing approach was applied to evaluate the total medical costs. The points of view are that of the National Health Insurance Fund (NHIF), hospital and the patients. Collected cost data are from the NHIF and hospitals tariffs, patients, and from the positive dug list for medicines prices. Statistical processing was through descriptive statistics and Chi-squared test. **RESULTS:** 76% of patients were male. 93% were diagnosed in grade A and B according to Child-Pugh classification. 97% reported complications, and almost all developed esophageal varices. 847 hospitalizations were recorded for 3 years period with average length of stay 17 days. The mortality rate of 7% was extremely high. The total direct medical costs for the observed cohort of patients for 3-year period accounted for 1,2 million BGN (0.6 million EURO) and average cost per patient per year is 1343 BGN (671 Euro). The proportion of cost paid by the NHIF is 2/3 to 1/3 for the hospital and the patients. A statistically significant correlation between the age, follow-up, number of hospitalizations and the Child-Pugh stage was found. **CONCLUSIONS:** HCV-related cirrhosis is resource demanding and implicit high direct medical costs as it is related with lots of hospitalizations and leads to complications acquiring additional treatment.

PIN42

THE COST OF TREATING RECURRENT CLOSTRIDIUM DIFFICILE INFECTION IN PATIENTS ATTENDING INFECTIOUS DISEASE CLINICS AT FOUR HOSPITALS IN SWEDEN

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OBJECTIVES: The aim of this study is to investigate the cost of treating recurrent Clostridium difficile infection in patients attending infectious disease clinics at 4 hospitals in Sweden. **METHODS:** Following approval by the Central Ethical Review Board in Stockholm patient records of 120 patients were used to record the resources used to treat the latest recurrent infection. Recurrence was defined as a new toxin-positive Clostridium difficile infection within 12 weeks of the previous Clostridium difficile infection. The sample included 47 patients not hospitalized and 73 hospitalized patients. All resources used were itemized and a point estimate of the associated costs calculated using the average of two or more pricelists from county councils in Sweden. **RESULTS:** This study shows that the treatment costs at the four participating infectious disease clinics in Sweden for treating a single event of recurrent Clostridium difficile infection ranged from SEK 921 to SEK 278323. Median cost for non-hospitalized patients was SEK 5397 and for hospitalized patients SEK 68078. We found that the 10% of the patients with the highest resource use accounted for MSEK 2,38, or nearly 40% of the accumulated resource use of MSEK 6,25 used to treat the 120 studied patients. **CONCLUSIONS:** Significant costs are associated with treatment of recurrent Clostridium difficile infections, especially when hospitalization is needed. Minimizing the need for hospitalization during treatment is the single most important objective when minimizing the economic burden of recurrent Clostridium difficile infection.

PIN43

THE DEVIL IS NOT SO BLACK AS HE IS PAINTED – THE FUTURE OF IMMUNIZATION IN POLAND

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OBJECTIVES: Considering the burden of meningococcal and pneumococcal disease in 0-5 years old children in Poland, we aimed at determining which vaccine(s) to prioritize for a Universal Mass Vaccination (UMV) program to reduce the burden by 15% at the lowest annual budget. **METHODS:** A Pediatric Expert Group on the Immunization Program in Poland defined pneumococcal vaccines as a priority based on epidemiological data (high frequency with growing antibiotic resistance) but the need for prevention against meningococcal disease was also highlighted. A vaccine portfolio management model was adapted to the Polish situation, considering pneumococcal and meningococcal (type B and C) vaccines. This optimization model determines the optimal combination of vaccines to achieve a targeted public health objective at the lowest annual vaccination budget. Disease incidences, treatment pathways, vaccine efficacies, and maximal achievable UMV coverages were derived from published sources and expert opinion. The public health goal was to reach a 15% reduction over 5 years in disease cases, hospital occupancy or deaths related to both pneumococcal and meningococcal disease combined. **RESULTS:** Using pneumococcal vaccine only enables to achieve the targeted 15% reduction in cases, hospital occupancy or deaths at annual coverage of respectively 76.9%, 81.0%, 57.1%, and at the lowest annual vaccination budget of respectively €26, €27 and €19 million. If meningococcal type B vaccine were prioritized in a UMV program, pneumococcal vaccine should still be added to achieve the public health objective. In such scenario, the annual vaccination budget would amount to €57, €59 and €48 million, at the maximum achievable coverage of 60% for meningococcal vaccine and pneumococcal coverage of 76.8%, 80.8% and 47.9%. **CONCLUSIONS:** Pneumococcal vaccine on its own can achieve the targeted 15% reduction in disease burden at the lowest vaccination budget. Vaccination against pneumococcal disease should therefore be prioritized in a UMV program in Poland.

PIN44

PHARMACOECONOMIC EVALUATION OF THE INTRODUCTION OF ROUTINE VARICELLA VACCINATION IN CHILDREN IN THE UNITED KINGDOM

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OBJECTIVES: Varicella is a common childhood disease caused by varicella-zoster virus (VZV). Annually it affects around 651,000 individuals with 42% consulting general practitioners and 0.5% being hospitalized with recent trend of increase in the United Kingdom (UK). This poses significant public health concern due to high infection rates and associated economic burden. In countries with routine varicella vaccination significant reduction in varicella burden was observed. This study assesses the cost-effectiveness of introducing varicella vaccination as an addition to the current childhood immunization schedule of mumps, measles and rubella (MMR) vaccine in the UK. **METHODS:** An age-structured dynamic transmission model was fitted to VZV seroprevalence in the non-vaccinated population in the UK. The model simulated the evolution of varicella and herpes zoster with and without vaccination with a lifetime horizon. The vaccination strategy considered coverage and age at dose 1 (90%;1year) and 2 (80%;3years), and catch up at 12 years with 20% coverage. Costs and effects are discounted at 3.5%. **RESULTS:** The Incremental Cost Effectiveness Ratio at 5 and 15 years post introduction of vaccination with high coverage were £6,012(95%CI:-370;13,221)/Quality-Adjusted Life-Year (QALY) and £6,431(95%CI:337;13,188)/QALY, respectively. There were significant savings for outpatient and hospitalization costs: £22,274,734 and £5,178,472 by year 5; £82,954,153 and £17,470,473 by year 15, respectively. Varicella cases avoided following 5 and 15 years post implementation of vaccination were 399,604 (57.7%) and 655,232 (94.8%), respectively. **CONCLUSIONS:** Implementing varicella vaccination in the UK will reduce the disease burden both in terms of varicella cases and associated costs, and is likely to be cost-effective. However, high vaccination coverage is required to achieve high impact of vaccination. Depending on the evolution of the UK vaccination schedule, vaccination with either monovalent varicella vaccine or combination MMR+Varicella vaccine could be a suitable option for implementation of varicella vaccination as part of a national immunization program.

PIN45

THE PUBLIC HEALTH IMPACT AND COST-EFFECTIVENESS OF PNEUMOCOCCAL CONJUGATE VACCINATION IN ESTONIA

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OBJECTIVES: Estonia is now considering adding a pneumococcal conjugate vaccine (PCV) in its national immunization program to help reduce the burden of invasive pneumococcal diseases, pneumonia and acute otitis media (AOM). In this cost-effectiveness analysis (CEA), we estimate the vaccine price under which vaccinating with the pneumococcal non-typeable Haemophilus influenzae protein D conjugate vaccine (PHiD-CV) is considered cost-effective compared to no vaccination. **METHODS:** A static cohort model (Knerer et al. 2012) has been adapted for Estonia using local serotype distribution, disease incidence and direct medical costs. Vaccine efficacy assumptions come from large PCV randomized controlled trials. Base case parameters have been validated by an expert panel and other scenarios were explored in extensive sensitivity analyses. CEA perspective is a modified healthcare payer (only including parents' sick leave costs). The cohort is vaccinated at 2, 4 and 12 months with 95% coverage and followed over a lifetime (5% annual discount). **RESULTS:** Under base case assumptions, vaccinating a cohort of 14,021 infants in Estonia with PHiD-CV would prevent 3927 AOM-related outpatient visits, 248 myringotomies, 93 cases of pneumonia, 8 cases of meningitis and 3 deaths over the cohort's lifetime. Total effectiveness results translate into 533 quality-adjusted life years (QALYs) gained and €706,242 saved in treatment costs (undiscounted). With a Gross Domestic Product (GDP) per capita of €14,860 in Estonia (2014), the program would then be considered highly cost-effective (discounted incremental cost-effectiveness ratio (ICER) < 1 GDP/capita) if the vaccine price is below €28.69/dose (€51.38 and €74.08/dose for 2 and 3 GDP/capita, respectively). Reducing base case net herd protection by half, discounting at 3% and accounting only for direct medical costs would result in highly cost-effective thresholds of €21.47, €56.20 and €25.63/dose, respectively. **CONCLUSIONS:** Our model predicts that PCV vaccination would be highly cost-effective under €28.69/dose and cost-effective until €74.08/dose in Estonia.

PIN46

COST-EFFECTIVENESS ANALYSIS OF HERPES ZOSTER VACCINATION IN HONG KONG

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OBJECTIVES: Herpes zoster (HZ), caused by reactivation of varicella zoster virus, is characterized by dermatome-based rash and severe pain. Post-herpetic neuralgia may occur following HZ. The risk of HZ increases with older age and reduced immunity. HZ vaccine has been first approved for adults aged 60 years and